



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10**

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**SUPERFUND &
EMERGENCY
MANAGEMENT DIVISION**



Forest Service Intermountain Region

**324 25th Street
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January 15, 2021

ACTION MEMORANDUM

SUBJECT: Stibnite Mine Site Time Critical Removal Action, Valley County, Idaho

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THRU: Linda Jackson, Forest Supervisor
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TO: James Hubbard, USDA Under Secretary for
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I. PURPOSE

The purpose of this Action Memorandum is to document the decision to conduct an enforcement-lead time critical removal action (TCRA) at the Stibnite Mine Site (Site) located near Yellow Pine in Valley County, Idaho (Figure 1). The primary objective of this TCRA is to eliminate or reduce potential ecological and human exposure to metals by mitigating sources of contamination from contact with sediment and surface water.

Pursuant to Section 104 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA), 42 U.S. Code (U.S.C.) § 9604, the United States Environmental Protection Agency (EPA) and United States Forest Service (USFS) are issuing this Action

Memorandum to document the proposed enforcement-lead TCRA at the Stibnite Mine Site. The TCRA is composed of the following five actions:

- Stream Diversion Project. Diverting clean surface water around certain known source areas.
- Lower Meadow Creek Valley Tailings Removal. Removing up to 25,000 tons of contaminated sediment and mine waste from the Lower Meadow Creek and East Fork of the South Fork of the Salmon River (EFSFSR) channel and streambanks. Placement of the removed material in an on-site repository constructed on the former Canadian Superior Heap Leach Pads.
- Bradley Man Camp Dumps Removal and Onsite Repository Project. Removing approximately 200,000 tons of waste and contaminated sediment from the Bradley Man Camp Dumps. Development of an onsite repository at the Canadian Superior Heap Leach Pads (Canadian Superior Repository). Placement of waste removed from the Bradley Man Camp Dumps in the onsite repository.
- Northwest (NW) Bradley Dump, Stream Waste Material Removal and Slope Stabilization. Removing approximately 100,000 tons of saturated and potentially-saturated mine waste material from within and along the bank of the EFSFSR adjacent to the NW Bradley Dumps and placement of that material adjacent to the U.S. Department of Agriculture, U.S. Forest Service (USFS), repository and other bench areas, as needed. Cut and stabilize the banks to prevent continued sloughing and erosion into the EFSFSR.
- Adit Study. Characterizing sources of contamination from former mine adits for the optional Phase 2 evaluation and removal actions of each of the five adits that will be conducted under a separate Action Memo

The potentially responsible parties (PRPs) for the Stibnite Mine Site are Midas Gold Corp.; Idaho Gold Resources Company, LLC; Stibnite Gold Company; and Midas Gold Idaho, Inc. (collectively, the "Respondents"). EPA and USFS expect that the PRPs will sign an Administrative Settlement Agreement and Order on Consent (ASAOC), and Midas Gold Idaho, Inc. will be implementing the actions on behalf of the related entities who will be the Respondents in the ASAOC. Midas Gold Idaho, Inc. will implement the TCRA as approved by and under the oversight of EPA and USFS, the co-lead agencies for the Stibnite Mine Site, in consultation with the Idaho Department of Environmental Quality (DEQ), which is a support agency.

II. SITE CONDITIONS AND BACKGROUND

Site Name:	Stibnite Mine Site
Superfund Site ID (SSID):	Not listed on the National Priorities List (NPL), The site was proposed for inclusion on the NPL in 2001.
National Response Center Case Number:	None
EPA ID (CERCLIS):	ID9122307607
Site Location:	Valley County, Idaho
County:	Valley
Lat/Long:	Latitude: 44.53.33N Longitude: 115.20.43W

Potentially Responsible Parties (PRPs):	Midas Gold Corp., Idaho Gold Resources Company, LLC, Stibnite Gold Company, and Midas Gold Idaho, Inc.
NPL Status:	Not Listed
Removal Start Date:	June 2021

A. Site Description

1. Removal Site Evaluation

The Stibnite Mine Site (Site) is located along the EFSFSR. Numerous historical investigations at the Site (described in Section II, B) have identified hazardous substance (metals and cyanide) contamination in surface water caused by mining activities. Explanations of the specific removal and investigation sites is provided below.

- Stream Diversion Project. Surface water diversions are needed to divert clean water from the following source areas:
 - The NW Bradley Dumps. This source area consists of extensive waste rock dumps covering over 30 acres along the bank of the EFSFSR southwest of the confluence with Sugar Creek. Hennessy Creek currently leaks from a ditch system and infiltrates upgradient of the NW Bradley Dumps. This water likely infiltrates through the waste rock in the dumps, potentially contributing to the elevated metals concentrations observed in the EFSFSR.
 - The Defense Minerals Exploration Administration (DMEA) Waste Rock Dump Area. This source area is on the western side of the EFSFSR valley approximately 0.75 miles south of Fiddle Creek and infills a portion of a small tributary valley. Existing data collected by the PRPs suggest that seeps from the DMEA Waste Rock Dump contribute to elevated metals concentrations at surface water monitoring station YPT-17. The diversion work in this area will be preceded by an evaluation of the potential for multiple seeps and water sources contacting mine waste in the DMEA Waste Rock Dump.
 - Smelter Flats/Hangar Flats Area. This area is the site of former mineral processing activities in Meadow Creek valley approximately 0.75 miles southwest of the EFSFSR confluence. The area is southwest of the Hecla heap leach pad and northeast of the Spent Ore Disposal Area (SODA) and Bradley Tailings Pile. Groundwater and seeps from this area impact water quality in Meadow Creek.
- Lower Meadow Creek Valley Tailings Removal Action Project. Fluvial deposits of tailings are present in Meadow Creek and contribute to metal loading in the surface water. Up to 25,000 tons of mine waste from the stream channel and banks will be removed and placed on the Canadian Superior Heap Leach Pad Repository (described below).
- Bradley Man Camp Dumps Removal and Onsite Repository Project. The Bradley Man Camp Dumps (also referred to as the “Upper Man Camp” and “Sawmill and Lower Man Camp”) are a large area of mine waste with the mappable extent estimated to contain approximately 200,000 tons of waste material. The dumps are located on the floodplain and banks of the EFSFSR and are a significant source of metals and sediment to the river. The Bradley Man Camp Dumps will be removed from streambanks and/or floodplains. This material will be consolidated on the existing Canadian Superior Heap Leach Pads, which will serve as a mine

waste repository. After removal, remaining slopes in the Bradley Man Camp area will be stabilized with temporary and permanent erosion controls. After placement in the Canadian Superior Repository, the consolidated mine waste will be covered with at least 18-inches of clean fill material, revegetated, and stabilized with temporary and permanent erosion controls.

- NW Bradley Dump Stream Removal and Slope Stabilization Project. The NW Bradley Dump is adjacent to the EFSFSR. Mine waste from the dump has sloughed into the river and the steep face of the mine dump continues to erode into the EFSFSR from a bank that is at the angle of repose. Up to 100,000 tons of saturated and potentially saturated mine waste will be removed and placed on the nearest available stable bench area of the existing mine waste dump. The riverbank will be graded back to a stable slope (e.g., 3:1) to prevent continued sloughing and erosion into the EFSFSR. The newly cut slope will be stabilized with temporary and permanent erosion controls.
- Adits Study. Mine-influenced water draining from the following adits seep into the EFSFSR watershed and is suspected to contribute to metal loading to the surface water: Bailey Tunnel, DMEA Adit, Bonanza Adit, Cinnabar Tunnel, and Meadow Creek Adit. Investigations will collect baseline data on water quality, quantity, and geotechnical conditions in the adits to inform optional Phase 2 removal actions at the five adits.

2. Physical Location

The Stibnite Mine Site is part of a mining area located along the EFSFSR, 14 miles southeast of the Town of Yellow Pine, in Valley County, Idaho (Figure 1). The southern boundary of the Stibnite Mine Site is about 0.5 miles north of the Meadow Creek Diversion Channel; the northern boundary is 0.25 miles south of the confluence of Sugar Creek and the EFSFSR. Tributaries to the EFSFSR within the Stibnite Mine Site boundaries include Meadow Creek, Blowout Creek, Garnet Creek, Fiddle Creek, Midnight Creek, Hennessey Creek, Sugar Creek, and West End Creek (Figure 1).

The Site is located on private and public land subject to unpatented mining claims, with the National Forest System (NFS) land portion administered by the USFS. The Nez Perce 2019 complaint states that the NFS land at the Site provides irreplaceable habitat for tribal treaty-reserved fish, wildlife, plants, and resources, including: spring/summer Chinook salmon, steelhead, bull trout, west slope cutthroat trout, redband rainbow trout, mountain whitefish, western pearlshell mussel, Rocky Mountain bighorn sheep, North American wolverine, fisher, gray wolf, elk, mule deer, moose, white-tailed deer, Clark's nutcracker, whitebark pine, limber pine, bent-flower milkvetch, Sacajawea's bitterroot, Idaho Douglasia, huckleberries, serviceberry, elk thistle, yarrow, wild onion, wild tobacco, Indian hemp, tule, elderberry, chokecherry, Indian tea, Oregon grape, thimbleberry, alder, birch, and kowskows (Nez Perce, 2019).

The location of the Site is classified as a Warm-Summer Continental Climate by Weatherbase.com. The climate is considered semi-arid with warm, dry summers and cold, wet winters. Average temperatures range from 9 degrees Fahrenheit (°F) in winter months to 80 °F in mid-summer (Western Regional Climate Center, 2018). Storm fronts frequently move through the region during winter, resulting in cold outbreaks, and can produce snowfall accumulations over 2 feet or more. Spring months are normally wet and windy with periods of high winds that may persist for days at a time. Weather conditions fluctuate quickly during the spring. Afternoon temperatures in the range of 30 to 50°F with precipitation in the form of rain or snow may occur interspersed with periods of sunny skies and afternoon temperatures between 50 to 70°F. Thunderstorms are not uncommon and are usually accompanied by rain showers and occasional snow. Low elevation snowpack usually melts quickly during the spring, but high

elevation snowpack can persist into June or later in the year. Average annual precipitation is approximately 45.8 inches based on data collected by the National Resources Conservation Services in 2018 (NCRS, 2018).

This Site is located in Valley county which is rural area located in central Idaho with low population densities of less than three people per square mile. Valley County is Idaho's fifth largest county by area but is only the 28th most populated (year-round) of the state's 44 counties (Census, 2010). Valley County experiences an influx of seasonal residents, recreationists, and vacationers during both the summer and winter months. The population of Valley County in 2018 was 10,401, with a median age of 48.7, based on 2018 Census data. The communities closest to the Site include Council, New Meadows, McCall, Donnelly, Cascade, and Yellow Pine. The largest of these communities is McCall, with a 2018 population of 3,226 (Census, 2018).

3. Site Characteristics

Mining and mineral processing, primarily of gold, antimony, and tungsten, have occurred at the Stibnite Mine Site intermittently since the early 1900s. A large ring-fault system cuts through Idaho Batholith granite and Precambrian metasedimentary rocks. This fault system contains gold, silver, mercury, antimony, and tungsten deposits. These deposits had significant tonnages of oxidized gold ore overlying sulfide mineralization. Iron, antimony, mercury, and arsenic sulfides constitute the sulfide mineralization. The Meadow Creek Fault Zone, West End Fault Zone, and Garnet Creek Fault Zone are three of the major highly mineralized zones within the Stibnite Mine Site.

Two major periods of mineral exploration, development, and operations have occurred in the Stibnite Mining District. These activities, which have occurred over the past century, have left behind substantial environmental impacts that remain to this day.

The first period of activity commenced in the mid-1920s and continued into the 1950s; it involved the mining of gold, silver, antimony, and tungsten mineralized materials by both underground and, later, open pit mining methods. During World War II, this District is estimated to have produced more than 90 percent of the nation's antimony and 65 percent of the nation's tungsten; materials that were used in munitions, steelmaking, fire retardants and for other purposes. Strategic metal mining operations at Stibnite continued through much of the Korean War. Antimony-gold-tungsten mining and milling ceased in 1952, near the end of the Korean War. Major historic mining operations included: (1) the Meadow Creek Mine and ore processing facilities in the Meadow Creek Valley, which were operated between 1919 and 1927 by the Meadow Creek Silver Mines Company and between 1928 and 1938 by the Yellow Pine Company; and (2) the Yellow Pine Mine underground workings and open pit on the EFSFSR, operated primarily by the Bradley Mining Company between 1937 and 1952. Until 1952, most of the ore processing occurred in the Meadow Creek Valley, at the site of the Meadow Creek Mine. Processing facilities operated by the Bradley Mining Company included a mill, flotation plant, and a smelter (operated intermittently between 1949 and 1952, and again briefly from 1956 to 1957). During operation of the Meadow Creek Mine and Yellow Pine Mine, mine tailings were disposed of in impoundments throughout the Meadow Creek Valley floor (Figure 1). The tailings deposits in Meadow Creek are referred to as the Bradley Tailings, after the operator of the Yellow Pine Mine. Initially, tailings were disposed of in areas in lower Meadow Creek Valley adjacent to the processing facilities. A larger tailings impoundment was built near the end of World War II in upper Meadow Creek Valley above Blowout Creek. The volume of the Bradley Tailings is estimated to be between 3.7 and 4.2 million cubic yards in the upper tailings' impoundment.

Between 1952 and 1978, the site was largely idle, and during this time the upper and lower Meadow Creek diversions failed, allowing the creek to erode through tailings. The USFS has estimated that 10,000 tons of tailings washed into Meadow Creek at a rate of approximately 500 tons per year.

The second period of major activity in the District started with exploration activities in 1974, followed by open pit mining and seasonal on-off heap leaching, and one-time heap leaching from 1982 to 1997. Ore was provided by multiple operators from a number of locations and processed in the heap leaching facilities. The West End mining area was mined between 1982 and 1990 by various entities including Canadian Superior Mining Company (a dissolved former subsidiary of Mobil), Twin River Developments (TRD), Pioneer Metals Corporation, and Barrier Reef, Inc. Stibnite Mine, Inc. (SMI), a subsidiary of Dakota Mining Corporation, mined gold in the West End area and Garnet Creek between 1991 and 1997, and Hecla mined oxide gold ore from the Homestake ore body between 1988 and 1992. SMI ceased mining operations in 1997 and declared bankruptcy in 1999.

Between 1982 and 1984, mining of low-grade oxide gold ore was undertaken by Canadian Superior and TRD. On/off leach pads and associated cyanidation processing facilities were constructed near the site of the former Meadow Creek Mine and Bradley processing facilities. Canadian Superior and TRD used neutralized ore from the leach pads to encapsulate the Bradley tailings impoundment and to prevent erosion of the fine-grained Bradley tailings into Meadow Creek. In addition, Canadian Superior reconstructed the Meadow Creek Diversion Channel around the Bradley Tailings Impoundment (BT), built a keyway (earthen dam) at the base of the tailings impoundment to add structural stability and prevent mass failure of the tailings, realigned lower Meadow Creek, and covered the tailings in the lower Meadow Creek Valley with waste rock and other materials. The goal of these projects was to decrease the sediment load to Meadow Creek from the historic Bradley Tailings deposits. The on/off leach pads and neutralized (spent) ore disposal area at the BT were later used by Pioneer Metals (1985-1990) and SMI (1991-1997), who continued to mine ore from various pits in the West End area, as well as from Garnet Creek Pit. In 1997, the BT/SODA disposal area covered about 76 acres in the upper Meadow Creek Valley.

Hecla mined oxide gold ore from the Homestake Pit between 1988 and 1992, first using the Pioneer leach pads for gold extraction (in 1988) and then constructing a permanent heap to the west of the Pioneer pads and on top of the old Bradley milling facilities. The heap was finished in 1991.

The current owners of the Stibnite Mine Site are planning to resume mining operations. Midas Gold Idaho, Inc. has prepared a Plan of Restoration and Operations (PRO) for the Stibnite Gold Project at the Site.

4. Release or Threatened Release into the Environment of a Hazardous Substance, Pollutant, or Contaminant

Releases at the Site have occurred and are documented in multiple prior studies. Currently, there are ongoing releases of hazardous substances, pollutants, and contaminants at the site to surface water that impacts the EFSFSR. As documented in the August 2019 Nez Perce Notice of Intent to initiate a lawsuit regarding Clean Water Act violations (Nez Perce, 2019)), water samples from the Site show elevated concentrations of aluminum, arsenic, antimony, iron, manganese, mercury, thallium, and cyanide, among other constituents, in the EFSFSR and its tributaries. Most notable are elevated concentrations of arsenic and antimony. Mean concentrations of arsenic in data from surface water samples collected adjacent to the removal areas identified in this Action Memorandum, over a period of five years, range

from 22.9 µg/l to 11,550 µg/l, and mean concentrations of antimony in samples collected over the same time period range from 4 µg/l to 202.3 µg/l (Brown & Caufield, 2017).

The mining, milling, and processing activities created numerous legacy impacts including underground mine workings, multiple open pits, development rock dumps, tailings deposits, heap leach pads, spent heap leach ore piles, a mill and smelter site, three town sites, camp sites, a ruptured water dam (with its associated erosion and downstream sedimentation), haul roads, an abandoned water diversion tunnel, an airstrip, and other disturbances. Extensive forest fires have compounded the human-created impacts and have increased soil erosion and impacted water quality.

Both the East Fork of Meadow Creek and the main stem of Meadow Creek were severely impacted by past mining activity. The East Fork of Meadow Creek, locally known as "Blowout Creek," is one of the largest sources of sediment to EFSFSR. Blowout Creek got its name from a water dam that failed in the 1960s. The washout scarified an erosional channel and drained the meadow and the productive wetlands above. The erosional and dewatering effects continue today, with sediment being flushed downstream with every spring melt and summer rainstorm. The finer sediments choke the spawning grounds of Meadow Creek and the EFSFSR.

Historical mining-related activities have also resulted in alterations to stream configuration and habitat. These alterations include the Yellow Pine Pit, a pit lake created in 1955 when the flow of the EFSFSR was no longer diverted around the Yellow Pine Pit; Bradley waste rock dumps along the EFSFSR above and below the Yellow Pine Pit; the BT/SODA disposal area; Meadow Creek channel diversions; and debris and Bradley tailings being re-deposited due to the catastrophic failure of the dam on Blowout Creek in 1965.

Source areas of these contaminant discharges from the Site are identified for removal actions and a removal study, as described in Section V.

5. NPL Status

The Site is not listed on the NPL. The Hazard Ranking System ranking was completed (August 2001) and the site was proposed for inclusion on the NPL in 2001.

6. Maps, Pictures, and Other Graphic Representations

Figure 1 - Map of Stibnite Mine Site.

B. Other Actions to Date

1. Previous Actions

From 1982-1984, the operators performed activities to prevent erosion of fine-grained Bradley Tailings into Meadow Creek. This action consisted of placement of the SODA over the tailings.

In 1995, SMI entered into an Administrative Order on Consent (AOC) with EPA to stabilize the BT/SODA disposal area and improve water quality in Meadow Creek. Activities conducted in 1996 and 1997 included redirecting discharge from, and draining, the Meadow Creek Pond that lay behind the tailings impoundment and beginning construction of a new diversion channel to minimize contact of stream flow with the Bradley Tailings. SMI ceased mining at the site at the end of the 1997 season due

to economic considerations. SMI did not complete the AOC work and EPA terminated the AOC in December 1997.

In May 1998, a new AOC was signed between Mobil Oil Corporation, EPA, and the USFS to stabilize and reclaim the BT/SODA disposal area. The goals of the Bradley Tailings Diversion and Reclamation Project were to minimize surface water contamination of Meadow Creek by: (a) constructing a barrier to the migration of particulates; (b) stabilizing the Meadow Creek Channel; (c) stabilizing exposed tailings; and (d) reducing infiltration into the tailings. The project included constructing a new 4,575-foot-long channel into which Meadow Creek was directed on the south side of the BT/SODA disposal area, building a new drainage channel on the north side, lining the old Meadow Creek diversion channel to reduce seepage, closing the pond and covering about 5 acres of exposed tailings at the upper end of the BT/SODA disposal area, regrading and revegetating the 100-acre BT/SODA disposal area, revegetating the banks of the diversion channel, and installing voluntary stream restoration features such as channel pools and large boulders. The construction work was completed in 1998, and revegetation continued in 1999.

In 2002, the USFS, acting pursuant to its CERCLA authorities, removed tailings from former ponds and soils located at the former smelter stack area. The material was placed in a repository located at the Bradley NW waste rock dump. The Meadow Creek floodplain was reconstructed in the former pond area. Approximately 40 cubic yards of material were hauled offsite to Clean Harbors, an EPA-approved Resource Conservation and Recovery Act (RCRA) waste disposal facility. Approximately 400 cubic yards were hauled to the NW Bradley waste rock dump. The excavation of the repository was limited by materials containing high levels of arsenic in the waste rock dump. This material was left in-place and the cell was constructed above the material.

In 2004 and 2005, the USFS, acting pursuant to its CERCLA authorities, reconstructed approximately 3,300 feet of Meadow Creek directly downstream of Smelter Flats. This activity included the removal of approximately 35,000 cubic yards of Bradley Mill tailings in a portion of the channel. These materials were placed in a containment cell located on the SODA. Approximately 11,000 square yards of geotextile and 5,800 cubic yards of soil were used to cover the tailings placed at the SODA. The channel was reconstructed and revegetated with over 11,000 willow plants. The old channel was backfilled and reclaimed.

In 2009, a portion of the remaining tailings at Smelter Flats were regraded and covered by USFS, acting pursuant to its CERCLA authorities. The primary goal of this work was to reshape and cover the tailings in a manner to prevent further erosion and exposure risk. This work included construction of a drainage swale/ditch to prevent run-on to the covered tailings.

2. Current Actions

In approximately 2011, Midas Gold began establishing the environmental baseline and planning for the operation and expansion of the mine as part of their Stibnite Gold Project. Midas Gold's mine plan of operations is currently being reviewed under the National Environmental Pollution Act (NEPA) process. The USFS initiated the NEPA process in June 2017 and is preparing an Environmental Impact Statement to support its decision on Midas Gold's proposed mine plan of operations. Midas Gold is also finalizing an ASAOC with EPA and USFS for removal actions in certain areas of the Site. This parallel mine plan approval and permitting effort is separate from the ASAOC under CERCLA to implement this Action Memorandum.

C. Roles of State and Local Authorities

1. State and Local Actions to Date

None.

2. Potential for Continued State/Local Response

The state and local agencies will be consulted and invited to provide input as stakeholders in the actions at the Site.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT

Mining and milling of gold, antimony, and tungsten have taken place onsite since about 1927, resulting in tailings, spent ore piles, waste rock, and dumps along Meadow Creek and EFSFSR. Surface water discharges contain elevated concentrations of metals (e.g., antimony, arsenic, copper, lead, and mercury) and cyanide throughout the valley. These metal and cyanide concentrations in the surface water present an unacceptable risk to human health and the environment with hazardous contaminants greater than ten times background in several locations (HDR, 2017). Because surface water is the primary pathway for contaminant transport to biota, endangered species, public lands, and the EFSFSR, the removal actions and investigations identified in this Action Memorandum are necessary to mitigate these continuing sources of contamination.

When the lead agency makes the determination, based on factors listed in 40 CFR § 300.415(b)(2), that there is a threat to public health, welfare or the environment, the lead agency may take any appropriate removal action to abate, prevent, minimize, stabilize, mitigate, or eliminate the release or threat of release. The factors in 40 CFR § 300.415(b)(2) that apply to the Site are:

- High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface that may migrate to surface waters.
- Actual or potential contamination of drinking water supplies or sensitive ecosystems.
- Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances, pollutants, or contaminants.

As documented in the EPA 2001 Hazard Ranking Score (HRS) evaluation, toxic metals from waste material are contaminating the EFSFSR. These metals include antimony, arsenic, cadmium, copper, mercury, nickel, and lead. Concentrations of contaminants exceeding EPA freshwater chronic water quality criteria were detected in surface water samples collected from four sampling stations: Meadow Creek below the Keyway dam, Meadow Creek above its confluence with the EFSFSR, EFSFSR below its confluence with Meadow Creek, and EFSFSR above its confluence with Sugar Creek. There are ongoing releases of hazardous substances, pollutants, and contaminants from the Site to surface water streams that impact the EFSFSR, which is part of the headwaters for the Salmon River. Concentrations of metals exceeding three times background were detected in sediment samples also collected from the same four sampling stations. The potential for human food chain contamination has been established due to the presence of a hazardous substance that bioaccumulates in fish. For example, the 2001 risk

evaluation conducted for the HRS identified releases to Meadow Creek and the presence of a fishery within 15 miles downstream (EPA, 2001).

In addition, much of the Stibnite Mine Site is located on unpatented mining claims on NFS (public) land administered by the Payette National Forest. The NFS land at the Site provides irreplaceable habitat for the public and tribal treaty-reserved fish, wildlife, plants, and resources as stated in the 2019 Nez Perce complaint against Midas Gold, Inc. regarding Clean Water Action violations (Nez Perce, 2019).

- Weather conditions that may cause hazardous substances, pollutants, or contaminants to migrate or be released. Numerous forest fires have ravaged the immediate vicinity of the mine in the last two decades leading to increased risk of landslides during heavy precipitation events. Turbid runoff from unprotected contaminated surface soil is also possible during high-intensity, short duration storm events and spring snow melt events.

The TCRA proposed in this action memorandum is also necessary to reduce further migration of contaminants into the EFSFSR that may be exacerbated by stormwater runoff and seasonal snowmelt. Without implementation of the proposed actions described in Section V, storm events will continue to cause erosion of exposed mine waste and contaminated sediment, causing impacted surface water to flow into clean surface water in the EFSFSR. Diversion of clean surface water around source areas, removal of contaminated waste and sediment from the identified streams and floodplain areas, and characterization of tunnel and adit contributions of mine impacted water to surface water are actions needed to reduce ongoing migration of hazardous substances from the Stibnite Mine Site that increase in magnitude with precipitation events and spring runoff.

IV. ENDANGERMENT DETERMINATION UNDER CERCLA SECTION 104: POLLUTANTS OR CONTAMINANTS

Actual or threatened releases of hazardous substances or pollutants or contaminants from this Site may present an imminent and substantial endangerment to public health, welfare, and the environment.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Actions

1. Proposed Action Description

The required TCRA includes both time critical removal actions (construction of water diversions, removal of waste/sediment from streams, and construction of an onsite repository) and time critical studies at several adits. The TCRA will include five major projects:

- a. Stream Diversion Project. Construct three new diversion structures to reroute upgradient water around historical mining features to avoid generation of mine-impacted water. The diversion structures shall be Locations for surface water diversions are shown in Figure 1. The diversion structures shall be aligned to avoid contact with mine-impacted waste, include an appropriate liner or other means to ensure clean water is not impacted by mine waste, shall be designed and construction to withstand erosion and flow from site-specific storm events, and in accordance with standard engineering practices, such as those identified U.S. Forest Service Guidance, "Planning and Layout of Small Stream Diversions." (USFS, 2013). Stream diversions shall be

designed to minimize maintenance but shall be inspected and maintained to function as designed. Water diversions shall be designed to divert clean water around the following source areas:

- The NW Bradley Dumps
- The DMEA Waste Rock Dump Area
- Smelter Flats/Hangar Flats Area.

- b. Lower Meadow Creek Valley Tailings Removal Project. Mine waste/tailings shall be removed from the channel and banks of Lower Meadow Creek and the EFSFSR downstream of the USFS reconstructed Meadow Creek Channel and upstream of the EFSFSR Box Culvert. The removal action shall include excavation of approximately 25,000 tons of mine waste/tailings from the creek and adjacent to the creek, and placement of that material on the Canadian Superior Heap Leach Pads. The leach pads will be modified to serve as a permanent mine waste repository. Development of the Canadian Superior Repository is described in additional detail in item V.A. 1.c below.

Identification of fluvial deposits of mine waste may include multiple lines of evidence, including visual observations that identify areas where mine waste is present versus natural stream sediment; excavation of test pits and soil auger borings; and/or field measurements using an x-ray fluorescence (XRF) analyzer to assist in delineation by providing real time data of metal concentrations (e.g., arsenic) to determine the lateral and vertical extent of mine waste. Global positioning system (GPS) or other surveying methods shall be used to document the removal areas.

During removal of the 25,000 tons of mine waste, best management practices (BMPs) shall be used to minimize suspension of sediment and protect existing fish habitat during in-stream work and work adjacent to the stream, including:

- Refined Means and Methods: Conduct in-stream and bank work when the water level is lower (fall); use smaller excavation equipment and slower operating speeds; work in smaller segments each day rather than digging out a long area of mine waste sediment.
- Structural controls: Use rock gabion logs, temporary check dams, temporary coffer dams and/or sheet pile adjacent to/surrounding the removal areas to slow or divert water from the working area and reduce sediment load to the stream; and/or creation of temporary (or possibly permanent) diversions downstream, step-down pools or meanders using clean materials; use of sediment booms to trap and contain sediment and silt.
- Vegetation Controls: for example, removal work can include use of willows just downstream of the work area to slow the water velocity.

Following completion of the removal, the Meadow Creek and EFSFSR disturbed channels and banks along this reach shall be reconstructed such that each bank has a similar profile that is appropriate for the stream's hydrological and ecological setting. The 2004 USFS channel reconstruction immediately upstream of this reach should be used as a model for this reconstructed reach.

Mine waste that is consolidated on the Canadian Superior Repository shall be placed in a manner that is geotechnically stable and that maintains the integrity of the existing leach pad liner system

(e.g., by placing a minimum 6-inch cushion soil layer and/or placing select waste material that is free of angular rock). Mine waste that is saturated or that contains ice/snow should not be placed in the repository area until it is dry.

- c. Bradley Man Camp Dumps Removal and Onsite Repository Project. Remove the Bradley Man Camp Dumps from streambanks and/or floodplains and stabilize remaining slopes to prevent erosion. The Bradley Man Camp Dumps are a large area of mine waste (mappable extent estimated as approximately 200,000 tons of waste material) located outside of the proposed PRO disturbance area. During removal of the mine waste, BMPs shall be used to minimize suspension of sediment and protect fish habitat during in-stream work and work adjacent to the stream (e.g., consistent with BMPs used for the Lower Meadow Creek Valley Tailings Removal Project, as appropriate). Following completion of the removal, disturbed areas of the stream and banks along this reach shall be reconstructed in a manner that is appropriate for the stream's hydrological and ecological setting.

The removed mine waste shall be consolidated on the newly developed Canadian Superior Repository, which will serve as a mine waste repository. The repository will take advantage of the existing Canadian Superior Heap Leach Pads liner systems and will be designed to standards that could constitute a permanent disposal location for the waste materials. Because this is intended to be a permanent repository, design requirements and construction quality assurance/quality control (QA/QC) will be in compliance with Applicable or Relevant and Appropriate Requirements (ARARs) for long-term protectiveness (e.g., liner requirements, leachate management, operation requirements for waste placement, stormwater and erosion control, final closure and post-closure requirements). Placement of mine waste on the former leach pad liner systems shall be done in a manner to protect the existing liner systems, by placing a minimum 6-inch cushion soil layer and/or placing select waste material that is free of angular rock. Mine waste that is saturated or that contains ice/snow should not be placed in the repository area until it is dry.

After placement, the consolidated mine waste shall be covered. The waste piles will be graded to drain, minimize ponding (e.g., with slopes of 2-3 percent, and not steeper than 33 percent), and include drainage ditches or channels, as appropriate for the final configuration, to direct stormwater away from the consolidated mine waste and minimize erosion. The mine waste shall be covered with at least 18-inches of clean fill material, stabilized with appropriate temporary (e.g., erosion control blanket, coir logs) and permanent erosion controls such as riprap drainages or check dams, and revegetated with a native perennial seed mix. This material may include sediments from Blow-Out Creek or other appropriate material that has been screened for metals. This mixed gradation of materials can be beneficial. Some larger-sized rocks mixed in with the finer-grained soil can help to control erosion.

- d. NW Bradley Dump Stream Waste Material Removal and Slope Stabilization. Remove approximately 100,000 tons of saturated and potentially saturated waste material/tailings within and along the bank of the EFSFSR adjacent to the NW Bradley Dumps to improve stream water quality. Identification of fluvial deposits of mine waste may include multiple lines of evidence, including visual observations that identify areas where mine waste is present versus natural stream sediment; excavation of test pits and soil auger borings; and/or field measurements using an XRF to assist in delineation by providing real time data of metal concentrations (e.g., arsenic) to determine the lateral and vertical extent of mine waste. GPS or other surveying methods shall be used to document the removal areas. During removal of the mine waste, BMPs shall be used

to minimize suspension of sediment and protect fish habitat during in-stream work and work adjacent to the stream (e.g., consistent with BMPs used for the Lower Meadow Creek Valley Tailings Removal Project, as appropriate).

Removed material shall be preferentially placed adjacent to the USFS repository on top of the NW Bradley Dump. This upland location contains similar material and, therefore, will not require a cap. It provides the greatest separation from groundwater available in the vicinity of the removal. If additional storage is required, a stable lower bench on the existing NW Bradley Dump shall be used for placement of the remaining material. Newly placed mine waste shall be graded and stabilized to prevent erosion.

The banks where the mine waste is adjacent to the stream shall be cut back to a stable slope (e.g., 3:1 slope) to prevent continued sloughing and erosion into the EFSFSR. The newly cut slope will be stabilized to prevent erosion of the mine waste material into the creek using temporary and permanent BMPs for erosion control and revegetation.

e. Adit Study: Conduct baseline studies of Mine Influenced Water at the following five adits:

- Bailey Tunnel
- DMEA Adit
- Bonanza Adit
- Cinnabar Tunnel
- Meadow Creek Adit.

The study shall include measurements of water quality, quantity, and collection of geotechnical data needed to inform removal actions. The data will be used to provide baseline conditions and seasonal measurements of current (pre-dewatering) and expected post-closure groundwater quality, quantity, elevations, and flow. Baseline studies will inform the design of removal action alternatives for the following existing mine features: Bailey Tunnel Adit, Meadow Creek Mine Adit, Cinnabar Tunnel Adit, DMEA Adit, and Bonanza Adit. The baseline studies for removal actions could include drilling and installing monitoring wells to measure groundwater elevations; installing surface water flow measurement weirs or flumes; continuously measuring hydraulic pressure; collecting water quality parameters including specific conductance, temperature, and pH; and seasonally measuring metals and suspended solids concentrations.

Planning documents and reports for the TCRA will be prepared for the Agencies' review and approval, as defined in the ASAOC Scope of Work (SOW). Implementation of the work will be verified following the QA/QC procedures defined in Construction Quality Assurance Plans and/or Quality Assurance Project Plans that will be prepared as components of the planning documents and approved by EPA.

Upon completion of the TCRA construction projects, the work will be documented as required by the ASAOC SOW. Completion documentation will include Removal Action Completion Reports, as defined in the ASAOC SOW, including preparation of as-built drawings, survey documentation, QA/QC testing results, repository construction documentation, documentation of volumes of waste removed and placed in the repository, and data reporting. Upon completion of the TCRA study, an Adit Removal Action Characterization Report and Removal Action Alternatives Report will be prepared to document the adit study results and make recommendation for potential NTCRAs, described in the ASAOC SOW.

Post-removal site control plans will be prepared in accordance with the ASAOC and SOW to address long-term requirements for protectiveness. These plans will address operations, maintenance, and monitoring requirements that are appropriate for the final configuration of the TCRA.

The PRPs shall provide information supporting community involvement programs related to the activities performed pursuant to the ASAOC. The PRPs shall also participate in public meetings that may be held or sponsored by the Agencies to explain activities performed to implement the removal actions and removal study identified in the Action Memorandum.

2. Contribution to Remedial Performance

This TCRA would contribute to any remedial action performance if such action were selected in the future by reducing the amount of hazardous substances or pollutants or contaminants that reach the EFSFSR and will provide time critical investigations of the adits that are necessary for future remediation decisions.

3. Applicable or Relevant and Appropriate Requirements

ARARs are presented in Table 1 and Table 2.

4. Project Schedule

The TCRA schedule is detailed in the ASAOC.

VI. EXPECTED CHANGE IN SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

If the action is delayed or not taken, the releases currently taking place will continue, resulting in negative impacts on biota, including endangered species, children, and adults of the tribes, as well as the public lands and waters. In addition, delayed action could result in the spread of contamination.

VII. OUTSTANDING POLICY ISSUES

None.

VIII. ENFORCEMENT

Implementation of the TCRA will be in accordance with the ASAOC.

IX. RECOMMENDATION

This decision document represents the selected removal action for the Stibnite Mine Site. The four removal actions and removal study were developed in accordance with CERCLA, as amended, and is not inconsistent with the NCP. This decision is based on the Administrative Record for the site.

X. APPROVAL / DISAPPROVAL

APPROVAL:

CHRISTOPHER HLADICK
Digitally signed by
CHRISTOPHER HLADICK
Date: 2021.01.15 15:35:46
+08'00'

01/15/2021

Chris Hladick, Regional Administrator
EPA Region 10

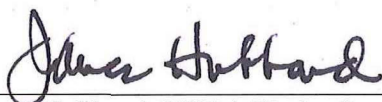
Date

DISAPPROVAL:

Chris Hladick, Regional Administrator
EPA Region 10

Date

APPROVAL:



James Hubbard, USDA Under Secretary for
Natural Resources and Environment

1/15/21

Date

DISAPPROVAL:

James Hubbard, USDA Under Secretary for
Natural Resources and Environment

Date

XI ATTACHMENTS

Figures

Figure 1 Site Features, Stibnite Mine Site

Tables

Table 1 Federal and State Chemical-Specific ARARs

Table 2 Federal and State Location and Action-Specific ARARs

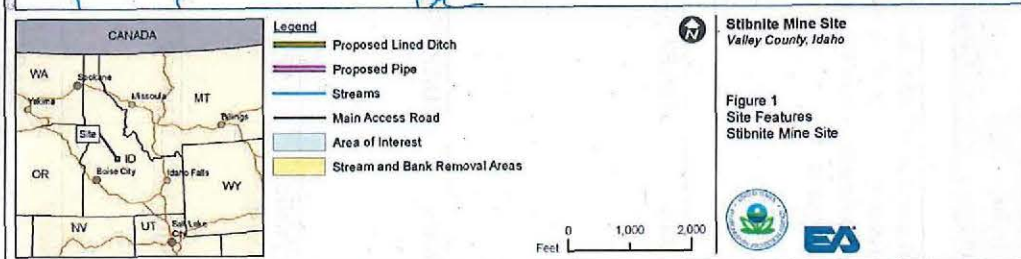
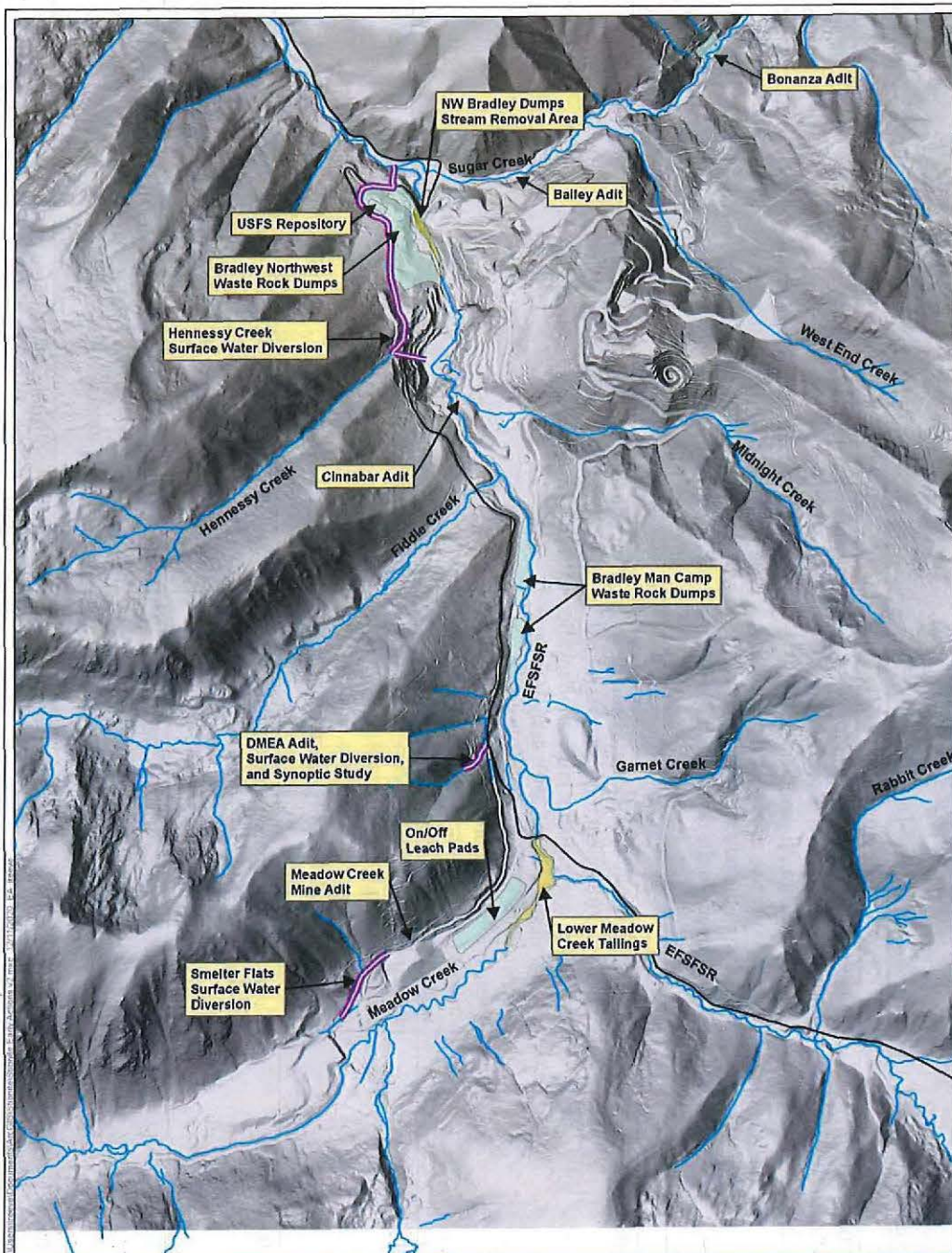


Table 1. Federal and State Chemical-Specific ARARs

	Statutes, Regulations, Standards, or Requirements	Citations or References	General Description	Site-Specific Comments	Determination
Federal					
1	Safe Drinking Water Act of 1974, National Primary Drinking Water Standards, and MCLs for Inorganic Contaminants	42 U.S.C. 300(f) et seq. 40 CFR 141.61 40 CFR 141.62	Establishes MCLs as criteria for groundwater and surface water that are or may be used for drinking water. The standards are designed to protect human health from the adverse effects of organic contaminants in the drinking water.	Applicable to groundwater at the Site, with respect to arsenic. There are no promulgated standards specified under the Safe Drinking Water Act that are exceeded for the other COCs. The Site-specific risk-based concentrations apply to the remaining COCs.	Applicable and/or relevant and appropriate
State					
1	Idaho Water Quality Standards	IDAPA 58.01.02	Surface water quality standards and wastewater treatment requirements including: water quality criteria for aquatic life use designations (.250), designations of surface waters found within Blackfoot Basin (.150), general surface water quality criteria (.200), antidegradation policy (.051), and mixing zone policy (.060).	Water quality standards are potentially applicable for surface waters onsite or affected by the selected remedy.	Applicable
2	Idaho Ground Water Quality Rule	IDAPA 58.01.11.200	Protects groundwater for beneficial uses including potable water supplies, establishes use classifications, and establishes water quality criteria for groundwater.	Applicable to groundwater at the Site.	Applicable
3	Idaho Rules for Public Drinking Water Systems	IDAPA 58.01.08	Regulates quality and safety of public drinking water.	Potentially applicable if any of the Site water is a public drinking water source; otherwise, substantive requirements would likely be relevant and appropriate.	Potentially applicable and/or relevant and appropriate
4	Rules and Standards for Hazardous Waste	IDAPA 58.01.05	Identifies characteristic and listed hazardous wastes and provides rules for hazardous waste permits.	Potentially relevant and appropriate if hazardous waste is identified or generated during implementation of the selected remedy.	Potentially relevant and appropriate
5	Rules for the Control of Air Pollution	IDAPA 58.01.01 (including IDAPA 58.01.01.650 and .651)	Rules providing for the control of air pollution in Idaho.	Potentially applicable depending on the selected remedy.	Potentially applicable

Table 1. Federal and State Chemical-Specific ARARs

	Statutes, Regulations, Standards, or Requirements	Citations or References	General Description	Site-Specific Comments	Determination
6	Idaho Risk Evaluation Manual for Petroleum Releases	IDEQ (2004b) Available online at https://www.deq.idaho.gov/media/967298-risk evaluation manual 2004.pdf	Provides guidelines and criteria to apply in risk-based decision making for petroleum releases.	Potentially relevant and appropriate if during the remedial action petroleum is released or a petroleum release is identified.	Potentially relevant and appropriate
NOTES: CFR = Code of Federal Regulations. COC = Contaminant of concern. IDAPA = Idaho Administrative Code (Idaho Administrative Procedures Act). IDEQ = Idaho Department of Environmental Quality. MCL = Maximum contaminant level. U.S.C. = United States Code.					

Table 2. Federal and State Location- and Action-Specific ARARs

	Statutes, Regulations, Standards, or Requirements	Citations or References	General Description	Site-Specific Comments	Determination	Location, Chemical, or Action Specific
Federal						
1	Migratory Bird Treaty Act	16 U.S.C. 703 et seq.	Protects all migratory bird species. It shall be unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, kill, attempt to take, capture, or kill, possess, offer for sale, sell, offer to barter, barter, offer to purchase, purchase, deliver for shipment, ship, export, import, cause to be shipped, exported, or imported, deliver for transportation, transport or cause to be transported, carry or cause to be carried, or receive for shipment, transportation, carriage, or export, any migratory bird, any part, nest, or egg of any such bird, or any product, whether or not manufactured, which consists, or is composed in whole or part, of any such bird or any part, nest, or egg thereof.	The prohibition is relevant and appropriate to areas of the Site where remedial action is selected that may provide habitat to migratory birds.	Potentially applicable and/or relevant and appropriate	Action
2	Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds	Executive Order 13186 of January 10, 2001	Encourages federal agencies to integrate migratory bird conservation principles into plans and actions.	To be considered	Potentially applicable and/or relevant and appropriate	Action

Table 2. Federal and State Location- and Action-Specific ARARs

	Statutes, Regulations, Standards, or Requirements	Citations or References	General Description	Site-Specific Comments	Determination	Location, Chemical, or Action Specific
3	RCRA Subtitle C - Characterization of Solid Waste (all primary and secondary wastes)	40 CFR 262.1 1(a) and (h)	<p>Must determine if solid waste is a hazardous waste using the following method:</p> <ul style="list-style-type: none"> f. Should first determine if waste is excluded from regulation under 40 CFR 261.4 g. Must then determine if waste is listed as a hazardous waste under subpart D 40 CFR Part 261. 	Applicable to characterization of waste that may be encountered during the removal action.	Potentially applicable and/or relevant and appropriate	Chemical
4	RCRA Subtitle C - Characterization of Solid Waste (all primary and secondary wastes)	40 CFR 262.1 1(c)	<p>Must determine whether the waste is (characteristic waste) identified in subpart C of 40 CFR part 261 by either:</p> <ul style="list-style-type: none"> h. Testing the waste according to the methods set forth in subpart C of 40 CFR part 261, or according to an equivalent method approved by the Administrator under 40 CFR 260.21; or i. Applying knowledge of the hazard characteristic of the waste in light of the materials or the processes used. 	Applicable to characterization of waste that may be encountered during the removal action.	Potentially applicable and/or relevant and appropriate	Chemical
5	RCRA Subtitle C - Characterization of Solid Waste (all primary and secondary wastes)	40 CFR 262.1 1(d)	Must refer to Parts 261, 262, 264, 265, 266, 268, and 273 of Chapter 40 for possible exclusions or restrictions pertaining to management of the specific waste.	Applicable to characterization of waste that may be encountered during the removal action.	Potentially applicable and/or relevant and appropriate	Chemical

Table 2. Federal and State Location- and Action-Specific ARARs

	Statutes, Regulations, Standards, or Requirements	Citations or References	General Description	Site-Specific Comments	Determination	Location, Chemical, or Action Specific
6	RCRA Subtitle C - Determinations for management of hazardous waste	40 CFR 268.9(a)	Must determine each EPA Hazardous Waste Number (waste code) applicable to the waste in order to determine the applicable treatment standards under 40 CFR 268 <i>et seq.</i> <i>Note:</i> This determination may be made concurrently with the hazardous waste determination required in Sec. 262.11 of this chapter.	Applicable to generation RCRA characteristic hazardous waste for storage, treatment, or disposal	Potentially applicable and/or relevant and appropriate	Chemical
7	RCRA Subtitle C - Determinations for management of hazardous waste	40 CFR 268.9(a)	Must determine the underlying hazardous constituents in the characteristic waste as defined in 40 CFR 268.2(i).	Applicable to generation of hazardous waste for storage, treatment, or disposal	Potentially applicable and/or relevant and appropriate	Chemical
8	RCRA Subtitle C - Determinations for management of hazardous waste	40 CFR 268.7(a)	Must determine if the hazardous waste meets the treatment standards in 40 CFR 268.40, 268.45, or 268.49 by testing in accordance with prescribed methods or use of generator knowledge of waste. <i>Note:</i> This determination can be made concurrently with the hazardous waste determination required in 40 CFR 262.1 1.	Applicable to generation of hazardous waste for storage, treatment, or disposal	Potentially applicable and/or relevant and appropriate	Chemical
9	RCRA Subtitle C - Determinations for management of hazardous waste	40 CFR 268.7(a)	Must comply with the special requirements of 40 CFR 268.9 in addition to any applicable requirements in CFR 268.7.	Applicable to generation of waste or soil that displays hazardous characteristic of ignitability, corrosivity, reactivity, or toxicity for storage, treatment, or disposal	Potentially applicable and/or relevant and appropriate	Chemical
10	RCRA Subtitle C - Disposal of RCRA hazardous waste in a land-based unit	40 CFR Part 268	Must comply with land disposal restrictions	Applicable to placement of waste in onsite waste repository	Potentially applicable and/or relevant and appropriate	Chemical

Table 2. Federal and State Location- and Action-Specific ARARs

	Statutes, Regulations, Standards, or Requirements	Citations or References	General Description	Site-Specific Comments	Determination	Location, Chemical, or Action Specific
11	Landfill Cover Design and Construction	EPA Technical Guidance Document: <i>Final Covers on Hazardous Waste Landfills and Surface Impoundments</i> , EPA OSWER 530-SW-89-047 (July 1989)	<p>This document recommends and describes a design for landfill covers that will meet the requirements of RCRA regulations. It is a multilayered system consisting, from the top down, of:</p> <ul style="list-style-type: none"> • A top layer of at least 60 cm of soil, either vegetated or armored at the surface • A granular or geosynthetic drainage layer with a hydraulic transmissivity no less than 3×10^5 cm/second • A two-component low permeability layer comprised of (1) a flexible membrane liner installed directly on (2) a compacted soil component with a hydraulic conductivity no greater than 1×10^7 cm/second. <p>Optional layers may be added, e.g., a biotic barrier layer or a gas vent layer, depending on the need.</p>	Applicable to construction of a RCRA hazardous waste landfill final cover	Potentially applicable and/or relevant and appropriate	Action
12	RCRA Subtitle D - Disposal of Nonhazardous Solid Waste	42 U.S.C. 6901 et seq.; 40 CFR Part 258	Provides criteria for cover material, run-on/runoff control systems, access control, and liquid restrictions.	The substantive requirements are relevant and appropriate to remedial actions that involve the consolidation of mine wastes in repositories or beneath protective barriers	Potentially applicable and/or relevant and appropriate	Action
13	RCRA Subtitle D - RCRA Criteria for Classification of Solid Waste Disposal Facilities and Practices	42 U.S.C. 6901 et seq.; 40 CFR 257	Certain criteria are required to be met by solid waste disposal facilities and practices, such as not restricting the use of the floodplain, not taking threatened or endangered species, and not causing a discharge to navigable waters.	The substantive requirements are relevant and appropriate to remedial actions that involve the consolidation of onsite wastes in repositories or beneath protective barriers	Potentially applicable and/or relevant and appropriate	Action

Table 2. Federal and State Location- and Action-Specific ARARs

	Statutes, Regulations, Standards, or Requirements	Citations or References	General Description	Site-Specific Comments	Determination	Location, Chemical, or Action Specific
14	RCRA, 42 U.S.C. § 6921(b) (Bevill Amendment)	40 CFR Part 261.4(b)(7) and RCRA Section 3001(b)(3)(A)(ii) (Bevill Amendment)	Exemption for certain mining wastes from RCRA Subtitle C hazardous waste requirements	Applicable for off-site disposal of mining wastes and sludge if any found to be hazardous. Solid waste requirements applicable to on-site management of mining wastes, including sludge from water treatment.	Potentially applicable	Action
15	RCRA: Subtitle C - Transportation of hazardous waste <i>offsite</i>	40 CFR 262.10(h)	Must comply with the generator standards of Part 262 including 40 CFR 262.20-23 for manifesting, Section 262.30 for packaging, Section 262.31 for labeling, Section 262.32 for marking, Section 262.33 for placarding.	Preparation and initiation of shipment of hazardous waste offsite	Potentially applicable and/or relevant and appropriate	Action
16	Best Management Practices for Soil Treatment Technologies	OSWER, 1997	Provides technologies for controlling cross-media transfer of contaminants during materials handling activities.	To be considered during excavation of contaminated soil	Potentially applicable and/or relevant and appropriate	Action
17	Clean Air Act	42 U.S.C. 7401 <i>et seq.</i>	Requires minimization of the harmful effects to air quality from excavation, construction, and other removal activities.	The substantive requirements of these regulations are relevant and appropriate to remedial actions that may involve the generation of fugitive dust (e.g., removal, transport, and consolidation of contaminated soil/sediments)	Potentially applicable and/or relevant and appropriate	Action
18	Clean Water Act (402)/ National Pollutant Discharge Elimination System	33 U.S.C. 1251 40 CFR 122 and 125	Specifies requirements under 40 CFR 122 for point-source discharge of stormwater from construction sites to surface water and provides for best management practices such as erosion control for removal and management of sediment to prevent run-on and runoff.	May be applicable if the selected remedy results in point-source discharges	Potentially applicable and/or relevant and appropriate	Action

Table 2. Federal and State Location- and Action-Specific ARARs

	Statutes, Regulations, Standards, or Requirements	Citations or References	General Description	Site-Specific Comments	Determination	Location, Chemical, or Action Specific
State						
1	Protection of Birds	Idaho Code Ann. § 36-1102	Prohibits the “take” or intentional disturbance or destruction of eggs or nests of any “game, song, rodent killing, insectivorous or other innocent bird.” The prohibition does not apply to English Sparrows or starlings.	Potentially applicable during remedial action	Potentially applicable	Action
2	Non-point Source Discharges	IDAPA 58.01.02.350	Regulates non-point source discharges, designates approved best management practices, and provides additional protection for outstanding resource waters.	May be applicable if the selected remedy results in non-point source discharges	Potentially applicable	Action
3	Point Source Discharges	IDAPA 58.01.02.400-.401	Provides limits and restrictions including possible limits on temperature and flow rates for point-source discharges.	May be applicable if the selected remedy results in point-source discharges	Potentially applicable	Action
4	Storage of Hazardous and Deleterious Materials	IDAPA 58.01.02.800	Prohibits the storage, disposal, or accumulation of hazardous and deleterious materials “adjacent to or in the immediate vicinity of state waters” without adequate measures and controls to ensure the materials will not enter state waters.	May be relevant and appropriate if the remedial action results in the storage of hazardous and deleterious materials near state waters	Potentially relevant and appropriate	Action
5	Well Construction Standard Rules	IDAPA 37.03.01J	Regulates well construction and abandonment.	May be applicable if the selected remedy includes additional wells	Potentially applicable	Action
6	Best Management Practices and Reclamation for Surface Mining Operations	IDAPA 20.03.02.140	Provides best management practices and reclamation standards for surface mining operations, including sand and gravel mining.	May be applicable depending on the selected remedy. Best management practices may also be relevant and appropriate to remediation activities (i.e., grading, re-contouring, and revegetation)	Potentially applicable and or relevant and appropriate	Action

Table 2. Federal and State Location- and Action-Specific ARARs

	Statutes, Regulations, Standards, or Requirements	Citations or References	General Description	Site-Specific Comments	Determination	Location, Chemical, or Action Specific
7	Idaho Water Quality Standards and Wastewater Treatment Requirements	IDAPA 58.01.02	Requirements for actions involving effluent discharges to surface water.	May be applicable if water treatment is part of the selected remedy	Potentially applicable	Action
8	Solid Waste Management Rules	IDAPA 58.01.06	Provides substantive requirements for operation and closure of solid waste management facilities.	Only material uniquely associated with mining is being addressed in the remediation, so these requirements are not applicable because the Site is not a solid waste management facility. See IDAPA 58.01.06.001.03(b)(iv). Some requirements may be relevant and appropriate with regard to regulated solid waste generated during the remedial action.	Potentially relevant and appropriate	Action
9	Hazardous Waste and Hazardous Waste Management Act of 1983	IDAPA 58.01.05 1993 Session Law, Chapter 291, Sections 1-8	Adopts federal RCRA regulations concerning the identification of hazardous waste and standards applicable to generators and transporters of hazardous waste as well as standards for owners and operators of hazardous waste treatment, storage, and disposal facilities.	Potentially applicable for management of investigation-derived wastes and remediation wastes.	Potentially applicable	Action
10	Idaho Rules for Control of Fugitive Dust	IDAPA 58.01.01.650-651	Provides practices for controlling fugitive dust emissions, including use of water or chemicals, application of dust suppressant, and covering trucks.	May be applicable during remedial action if construction practices generate fugitive dust.	Potentially applicable	Action
II	Idaho Toxic Air Pollutants	IDAPA 58.01.01.585-586	Requirements for maintaining air quality (none currently nor will they be likely associated with any remedial action).	Potentially applicable depending on the selected remedy.	Potentially applicable	Action

Table 2. Federal and State Location- and Action-Specific ARARs

	Statutes, Regulations, Standards, or Requirements	Citations or References	General Description	Site-Specific Comments	Determination	Location, Chemical, or Action Specific
12	Preservation of Historical Sites	Idaho Code Sections 67- 4111 to -4131 and 67-4601 to -4619	Requirements for protection of public lands and preservation of historical or archaeological sites in consideration of waste disposal.	Requirements may be applicable if historical or archaeological sites are present and/or may be disturbed during the remedial action.	Potentially applicable	Location
13	Idaho Classification and Protection of Wildlife Rule	IDAPA 13.01.06.300	Classifies fish and wildlife species; identifies threatened or endangered species; and specifics wildlife species that are protected from taking and possessing.	To be considered during ecological risk assessment.	Applicable	Location
14	Idaho Uniform Environmental Covenants Act	Idaho Code Sections 55-3001 to -3015	Allows recordation of an environmental covenant, which is a written agreement where the parties bind themselves and their successors in interest to the land, to comply with activity and use limitations.	Any environmental covenant must follow this Act	Applicable	Action
15	IDEQ Area Wide Risk Management Plan	IDEQ (2004a)	Recommends removal action goals and action levels for addressing releases and impacts from historical phosphate mining operations in southeast Idaho.	May be taken into consideration in developing risk-based cleanup levels.	To be considered	Action
16	Variances from water quality standards	IDAPA 58.01.02.260	Establishes procedures and requirements for obtaining a water quality variance.	Potentially applicable if Site-specific variances are proposed for a particular location or source.	Potentially applicable	Action

NOTES: CFR = Code of Federal Regulations.
cm = Centimeter(s).
EPA = United States Environmental Protection Agency.
IDAPA = Idaho Administrative Code (Idaho Administrative Procedures Act).
IDEQ = Idaho Department of Environmental Quality.
OSWER = Office of Solid Waste and Emergency Response.
RCRA = Resource Conservation and Recovery Act.
U.S.C. = United States Code.

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